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AN ESSAY
ON
NEURALGIA.

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NEW-YORK :
PRINTED BY J. SEYMOUR, No. 49 JOHN STREET

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1816.

AN
INAUGURAL DISSERTATION

ON

NEURALGIA,

SUBMITTED TO THE PUBLIC EXAMINATION OF THE
TRUSTEES OF THE COLLEGE OF PHYSICIANS AND SURGEONS,
OF THE UNIVERSITY OF THE STATE OF NEW-YORK,
SAMUEL BARD, M. D. PRESIDENT,

FOR
THE DEGREE OF DOCTOR OF MEDICINE,
ON

MONDAY THE SIXTH DAY OF MAY, 1816.



TO

WRIGHT POST, M. D.

PROFESSOR OF ANATOMY, PHYSIOLOGY, AND SURGERY, IN THE COLLEGE
OF PHYSICIANS AND SURGEONS ;

VALENTINE MOTT, M. D.

PROFESSOR OF THE PRINCIPLES AND OPERATIONS OF SURGERY ;

DAVID HOSACK, M. D. F. L. S.

PROFESSOR OF THE THEORY AND PRACTICE OF PHYSICK, AND OF MIDWIFERY ;

SAMUEL L. MITCHILL, M. D. F. R. S. ED.

PROFESSOR OF NATURAL HISTORY ;

WILLIAM JAMES M'NEVEN, M. D.

PROFESSOR OF CHEMISTRY AND MATERIA MEDICA ;

JAMES S. STRINGHAM, M. D.

PROFESSOR OF MEDICAL JURISPRUDENCE :

NO LESS IN ADMIRATION OF THEIR ABILITIES AND LEARNING,
*THAN IN GRATITUDE FOR THEIR NUMEROUS DISPLAYS OF PROFESSIONAL
AND PERSONAL KINDNESS,*

THIS

INAUGURAL DISSERTATION

IS

RESPECTFULLY DEDICATED,

BY THEIR MUCH OBLIGED PUPIL,

JOHN WILLIAM BOYLES MURRAY.

For

Henry W. Ducachet.—

A token of the

Author's regard..

HISTORY.



THE disease which the French first called *Tic douloureux*, and which has been generally styled by that name, in preference to Dr. Fothergill's more undefined appellation of "A painful affection of the face," has been scarcely noticed by ancient writers. It was so little heeded by modern physicians, that when that excellent practitioner invited the attention of his brethren to its existence, he was considered as its first describer.

Much doubt has been expressed concerning the meaning and origin of the word *tic*. Sauvages has a species *Trismus equinus gallicè le Tic. Sic dicitur quia equi hoc affectu laborantes dentibus præsepium impetunt et sonum Tic referunt**. Under the eighth species, *Trismus hypochondriacus*, he observes, *huc referri potest distortio musculorum genas, oculos & maxillam moventium involuntariè et pravo usu assueta, quæ vulgo Tic dicitur*. The same explanation of the term is given in the

* Nosologia Methodica, Class IV. ii. 6.

dictionaries of the Academy, Boiste and Cham-
 baud. The singular affection of horses, during
 which they strike their teeth together while
 biting at the manger, and the unseemly habits
 of twisting the face, eyes, and lower jaw, in
 which some persons indulge, are therefore the
 roots of this expression. The term *tic doulou-
 reux* is the ingenious application of forcible
 expressions used in common life to an acute
 disease, which to the superficial observer seems
 to partake of two analogous affections.

Besides the terms *tic douloureux* and *pain-
 ful affection of the face* of Dr. Fothergill, it
 has been variously styled by different writers,
Trismus dolorificus, *Tic convulsif*, *Morbus
 nervorum faciei crucians*, *Prosopalgia*,
Aërophobia, &c. But since these expressions
 by no means specify the seat nor nature of the
 disorder, the generick term NEURALGIA, recom-
 mended by Professor Chaussier, is certainly
 the most correct, classical, and comprehensive.
 According to its situation in the system, it may
 be specifically distinguished as *Neuralgia faciei*,
brachii, *digiti*, &c. Banishing the unscientifick
 language hitherto employed, with the approba-
 tion of many learned and eminent physicians,
 the disease should henceforward be designated
 and acknowledged only as NEURALGIA.

In detailing the records of Neuralgia, after
 giving due credit to the more ancient writers,

the medical men of the present day seem to consider Dr. John Fothergill^a as its principal discoverer. The notices of Neuralgia among modern physicians have been numerous, but none have given a systematick view of it, specifying all the methods of management, and especially, as connected with the various surgical operations now recommended for its relief.

The Greeks are perfectly silent concerning it; but it is said to have been mentioned by Rhazes, the celebrated Arabian, whose description he acknowledges to have been derived from Simion Seth, physician to an Eastern Emperor, during the eleventh century. “Subsequent to this period, Ebr Sina, of the same nation, described the disease, more fully and with more precision^b.” From the investigation which has been bestowed on this subject, it appears that, John Hartmann Degener, a physician of Nimeguen, in 1724, is next entitled to the distinction of having given the most circumstantial account of Neuralgia^c. Dr. Siebold^d, whose

^a Med. Observ. and Inq. vol. v.

^b New England Journal of Medicine and Surgery, vol. ii. p. 115. Dr. Jackson on Tic douloureux.

^c Acta Naturæ Curios. “De dolore quodam perraro acerboque maxillæ sinistræ partes occupante, et per paroxysmos recurrente.” vol. i. 347.

^d Doloris Faciei, morbi rarioris atque atrocis observationibus illustrati, adumbratio Diatribe I. qua exercitationes clinicas in nosocomio juliaeo, habendas indicit G. Ch. Siebold, Dr. Med. Prof. Wirceburgi 1795. Diatribe II. 1797. Translated in the Medical and Physical Journal, No. 30.

research has been practical and laborious, mentions that in 1673, observations on this disease were published by Dr. Daniel Ludwig^e. Posterior to these publications, N. André^f, a surgeon of Versailles, in his observations on the diseases of the urethra, has some remarks on *Tic douloureux*; to him this appellation is traced, and it has been adopted in common parlance and formal treatises since his time. In the edition of Sauvages' *Nosologia Methodica*, 1763, that illustrious physician gives a character of the disease under the title of *Trismus dolorificus*, particularly notices the deceptive nature of its symptoms, and prescribes caustick or division of the nerve, as the certain cure.

As before stated, the philanthropick Fothergill embellished the subject by his clear and practical description of the disease, of which he professed to know no more than what had occurred to him in his private practice. The fond national partiality of his countrymen emblazoned Dr. Fothergill's reputation as the discoverer of a new disease, and with his brief history, the inquiry in England rested. The impossibility of obtaining the works in which the labours of his predecessors are registered, is my

^e Misc. Nat. Cur. Dec. i. Ann iii. Observ. 252. "De dolore superciliari acerbissimo."

^f Diagnos. Med. et Recueil period. de la Soc. de Med. de Paris, 1756, tome iv. p. 318. "Observations pratiques des maladies de l'urethre et sur les plusiers faits convulsifs."

apology for the imperfect condition in which this inquiry is necessarily relinquished. Following Dr. Fothergill are many writers, among whom, the principal are Messrs. Thouret, Andry, Pujol, and Richter. Pujol's essay is said to exhibit a very learned and laborious investigation into ancient authorities, for the purpose of ascertaining the extent of ancient knowledge and observation.

The ingenious Dr. Haighton^g has distinguished himself by the interesting view which he has taken of Neuralgia, and of its surgical treatment. Dr. S. Fothergill has also written a systematick treatise on the disease, so ably illustrated by his lamented uncle.

To the unfrequent appearance of Neuralgia, are we to ascribe the slight acquaintance which many physicians of eminence have acknowledged concerning it. Excepting the Italians, according to Dr. Siebold, writers of all nations have seen cases of Neuralgia. "Dr. Fothergill met with sixteen instances of it; Dr. Thilenius, a German physician, saw it but twice during a most extensive practice of twenty years; Dr. Aepli, a Swiss physician, only once in twenty-seven years." In America, of late years, many cases have been recorded. Professor Hosack has seen six cases; Dr. Jack-

son details his treatment of four patients; and Professor Mott, within a very few years, has been instrumental in relieving five sufferers. Other respectable practitioners in different parts of the union have borne testimony to its occurrence, and likewise to its tractability, when properly and actively treated.

As to the greater liability to this disease exhibited by either sex, some contrariety of opinion exists. In England, females have been afflicted with Neuralgia in the proportion of 14 to 1 male; while in Germany, the comparison of frequency is 21 men to 13 women. In America, the law of nervous irritability exposes females to the occurrence of this bane of comfort, to a greater degree than the hardier sex. All Dr. Jackson's cases were ladies; but Dr. Mott's experience inclines rather to the opposite opinion: only two of his patients were females. It is evident, that the history of Neuralgia is still very imperfect; and indeed for practical purposes the preceding details are of little value, except they be employed to convince the skeptical, or confirm the doubting.

Dr. J. Fothergill is inclined to believe, that the disease is rather an attendant on advanced life, than on an earlier period. "On reviewing the cases mentioned by different authors, we observe, that they were for the most part

confined to the period of age between the thirtieth and eightieth year; and instances of the disorder being met with at an earlier period of life have but rarely occurred.”—

“ Fortsmann, a German writer quoted with great respect by Heurteloup^h, says, that he has seen the disease in young girls of twenty, and even of nine years.” Heurteloup also gives a long and minute account of a Corsican, who was under thirty years of ageⁱ. Dr. Darwin, in his *Zoonomia*, relates a case unusually severe, and of great extent, in which the patient was between twenty and thirty years of age.

Connected with the irregularity of appearance as to age and sex, is the uncertainty of the temperament, in which a practitioner may expect to meet with Neuralgia. Indeed no habit of body nor of life seems exempt from its attacks: the laborious and the indolent, the phlegmatick and the nervous, the rigid fibre as well as the lax, the thin equally with the fat, the delicate and the robust, are exposed to the excruciating torments of neuralgick affections.

The season of the year is also equally incapable of regulating its occurrence.

^h Recueil de la Soc. de Med. de Paris, Tome iv. p. 205. “ Cette dissertation de Fortsmann est savante, pleine d’erudition, et merite de tenir place parmi les bons ecrits sur le tic douloureux de la face. On y trouve des exemples de jeunes filles de neuf et de vingt ans attaquées du tic douloureux.”

ⁱ Essay on Tic douloureux, by Dr. Jackson. New-England Journal, 1815.

Nor is Neuralgia confined to one part of the body. Professor Siebold, of Wurtzbourg, enumerates the following seats, as met with in authors :

1. *In one single part of the face*, viz. at the *inner canthus of the eye*, Fothergill; in the *orbita*, the same; at the *supercilia of the right eye*, Pujol; in the *joint of the jaws*, Selle, Pujol; in the *maxilla inferior*, at the passage of the *nervus infra-maxillaris*, (the entrance or exit?) Lentin; in the *ossa temporum*, Fothergill; in the *nervus infra-orbitalis*, Albinus, Van Wy, and many others; in the *ala nasi*, Vogler and Thouret; at the *margin of the tongue*, Lentin.

2. *In one half of the face*, Fothergill and others.

3. *In both cheeks*, Pujol.

4. *In both sides of the maxilla inferior, at the exit of the nerve*.

5. *In the whole head and face*, Lentin.

6. *In one foot*, Lentin.

Mr. Abernethy's^k remarkable case shews its existence in the ring finger of the left hand, extending in its progress up the nerves of the arm. Dr. Kelly^l witnessed its occurrence in the fore finger of the left hand, and Mr. Home^m has

^k Surg. Observ. vol. i. p. 244.

^l Dissertatio Inauguralis de Neuralgia. Edinb. 1810.

^m Phil. Trans. for 1801.

met with it in the thumb. Dr. Hosack mentions one lady whose fore finger of the right hand, and another whose second toe of the left foot, was affected by Neuralgia. “In the Edinburgh Medical and Surgical Journal”, a case is recorded by Dr. Verpinet, as occurring in one of the nerves of the fore arm, the consequence of a wound with a knife.”

The face, however, is most subject to attacks of Neuralgia, which has been satisfactorily traced to a morbid affection of some of the large nerves which render that portion of the body so susceptible of impressions. The portio dura of the seventh pair, forming the pes anserinus, and the nervus communicans faciei. The frontal nerve, being the termination of the ophthalmick branch of Willis, or first branch of the trigemini; the ultimate disposition of the second branch of the fifth pair, the infra-orbitary nerve; and lastly, the mental nerve, the third branch of that important trunk, are the sources of pain and suffering. The tongue, the tonsils, the radial, ulnar, and anterior tibial nerves, have been occasionally affected by the disease.

n Vol. iii. p. 14.

o American Medical and Philosophical Register, vol. iv. No. 11.

CHARACTER.

THE character of this affection, as given by Sauvagès, under the name of *trismus dolorificus*, is as follows: *Est difficultas maxima et valde dolorifica os aperiendi aut movendi cum uberi ptyalismo, pervigilio, et musculorum vicinorum continua et convulsiva agitatione.* Dr. Darwin^p has criticised this location and description, objecting, that it has not a fixed spasm like the locked jaw. But certainly the convulsion of the face, the tetanick (though temporary) closure of the lower jaw, and the tremulous agitation of the jaw and lips, are points in the description dwelt upon by many writers. Trismus is defined by Sauvages to be *convulsio vel tonica vel clonica maxillæ inferioris*. Therefore, without approbating the ideas of the great French nosologist, Dr. Darwin might well have spared his criticism, and have omitted remarks which have tended to weaken the authority of his illustrious predecessor.

The following character may be less exposed to exception than many which I have seen: *Neuralgia is marked by an acute pain gene-*

rally following the ramifications of some principal nerve, uncertain in its time of attack, short in its duration, frequent in repetition, accompanied by a convulsive action of the neighbouring muscles.



DESCRIPTION.



IN the commencement of Nèuralgia faciei, the correctness of the old appellation is perceptible; for the absence of swelling or any other external mark of disease, induces the by-standers to reprove the patient, for his ridiculous and disgusting contortions of the face. But while the Chorea Sancti Viti is frequently unattended by any other distress, than what proceeds from the unnatural positions of the body resulting from it, Neuralgia is invariably calculated to draw forth the deepest commiseration. Its first symptoms, sometimes, are occasional irregular twitchings of the muscles supplied by the diseased nerve. In other instances, its strong resemblance to toothach has caused the fruitless sacrifice of many teeth. By degrees its genuine nature develops itself; the

spasmodick actions increase in frequency and acuteness, and a distressing and embarrassing train of symptoms is noticed. The pain is very irregular, and fickle as to its hour of accession. The patient's rest may be disturbed night after night, as well as his comfort destroyed during the day. The most trifling and opposite occurrences give rise to the spasms, which by their severity overcome the stoutest resolution, and force forth loud and involuntary screams of anguish. Washing the face, moving the hand or a handkerchief lightly over the face^q, eating, drinking, speaking, hawking and spitting, sneezing, coughing, and blowing the nose, will either of them in a moment awaken the most poignant and acute pain. Even touching the face with a finger, slightly rubbing the forehead, putting on a pair of spectacles, or even only opening the mouth, will excite a return of the pains. Taking into the mouth any thing hot, cold, or acid, will produce the effect, perhaps with aggravated violence. Combing the hair, shaving, reading aloud, or any thing that gives the slightest motion to the muscles of the face, will be likely to occasion in the part a throbbing, which seems to begin like the vibration of a musical cord, extending its effects to the cheeks, the eye, the nose, up to the scalp on the affect-

^q Dr. Gardner Jones' own case. Phil. Med. Muscum, new series. Vol. 1. No. 2.

ed side ; or from the corner of the mouth downwards to the base of the jaw, agitating the muscles of the chin ; after continuing a few seconds, sometimes a few minutes, and in aggravated cases even fifteen or twenty minutes, it will cease, and the part which had been affected will enjoy an interval of perfect ease. When the paroxysm comes on, the patient's whole body is convulsed from the excess of agony ; the eyes are intensely closed ; the tears trickle down the cheek ; the mouth is distorted, and, with the whole cheek, quivers ; the body unconsciously waves backwards and forwards, and the foot of the diseased side is involuntarily moved, in conformity with the flexure of the body. Sometimes, the pain seems as if a heated knife, or a sharp instrument was piercing or screwing into the flesh ; at others, as if red hot pincers were tearing or twisting it from the bone. The interruption to every enjoyment, and even every common occupation of life, as admirably described in the eloquent letter of Dr. Jones, descriptive of his own sufferings, is only equalled by the degree of misery, with which these paroxysms are attended. The wretchedness of a neuralgick person seems to approach the extreme of human misery ; being such as " neither words can describe, nor the imagination easily conceive."

The preceding delineation is applicable to a confirmed case, involving most of the facial nerves. In many instances, the operations of the disease are more confined, and give rise to a deception in the diagnosis. The first case recorded by Sauvages, was mistaken by him for Odontalgia, and treated accordingly. This mistake has been often repeated, as the obstinacy of the patient points to the gums, or a carious tooth, or the antrum highmorianum, as the seat of the disease. With this view the gum has been divided in various directions, many teeth have been unnecessarily extracted, and useless perforations have been made into the cavity of the upper jaw.

After lasting a certain time in one portion of the face, if not arrested, every neighbouring nerve will be involved in the malady. In Mr. Bosworth's case reported by Dr. Darwin, the supra and infra-orbital, and mental nerves, the branches of the pes anserinus, and also the branches of the superior maxillary nerve passing into the cheek between the pterygoideus internus muscle and the upper part of the lower jaw, were successively divided before relief could be obtained.

Although the sufferings of the patient are so great, it seldom happens that the constitution experiences much deterioration, during the continuance of Neuralgia. The aged most gener-

ally are its victims, and in some remarkable instances, other diseases have held their course uninterrupted and unmodified by this formidable attendant. In Mr. Pearson's communication^r is a case, however, in which mortification seized the interior of the cheek surrounding the diseased nerve, by which the patient's life was destroyed. How far this result may have been connected with the previous mercurial treatment, it is impossible to hazard an opinion.

Neuralgia generally attacks but one side of the face ; instances of both cheeks being involved are very rare. The right cheek appears more liable to its occurrence than the opposite. All Dr. Mott's patients were afflicted on the right side, as were also a majority of the cases recorded, in which the particular cheek is specified.

^r Edinburgh Medical and Surgical Journal, vol. 3.

CAUSES.



THE remote causes of Neuralgia are very obscure. In a plurality of cases, no predisposing nor exciting causes can be detected; in a few, some local injury is the only assignable cause. Cold; violent blows, especially on the head and face; punctures, as in bleeding; the partial division of a nerve; a contusion, as from a cannon or musket ball; cicatrices; congestions; a delicate skin; chewing of acrid substances; excessive talking; heavy coughing; long continued sneezing or blowing of the nose; and preceding toothach, are enumerated as having given rise to the complaint. Some of these are evidently mere attendants, and incompetent to its production, while others seem calculated rather to excite a paroxysm than the disease. Some patients have been cured by close attention to the digestive organs; therefore symptomatick Neuralgia may be considered as proceeding from and depending upon their derangement.

As the proximate cause of disease, should be deemed that peculiar condition of the affected organ which gives rise to the characteristick or attendant symptoms, we shall be equally at a

loss in determining the proximate cause of Neuralgia.

Dr. Fothergill is inclined to believe that a cancerous disposition is the proximate cause. "My subjects were for the most part, if not all, past the time of menstruation. They were generally of a firm and somewhat robust fibre, generally with black hair, and not subject to any particular diseases. Most of them had borne children, and nothing remarkable had occurred about the cessation of the menses. These and other appearances induced me to suspect that the cause of these extreme pains in the face might possibly be of a cancerous nature; the method of cure, and other circumstances corroborated the suspicion'."

The objections of Dr. Haighton are opposed to Dr. Fothergill's authority, in his own language.

"Out of several patients, whom Dr. Fothergill attended with this complaint, two only had schirrhous indurations of the breast, or any other symptoms of Cancer.

"We might ask, out of the considerable number of patients labouring under Cancer, how few of them have pains in the face, unless the Cancer be seated in that part? It is well known that local complaints of various kinds may attack the same patient, without having the least affinity to each other.

“ Cancer manifests itself by external appearances, as induration, ulcer, &c. This disease produces no visible change in the organization of parts, how long soever its duration may have been.

“ Cancer is seldom very painful on its first appearance. This complaint first announces itself by its acute lancinating pain.

“ In Cancer the pain is not subject to perfect intermissions. In this disease, the intermissions are well marked, though indefinite in their duration.

“ Cancer is always aggravated by even a simple incision on the part. This affection has been cured by a simple incision in a proper place.”

Neither sex is peculiarly disposed to Neuralgia, while the habit of females is well known to be obnoxious to cancerous diseases. The early age at which it has appeared in some females, during the continuance of the menstrual flux, and even surviving pregnancy, is adverse to his deductions from the advanced life of his patients.

Analogy in medical treatment, is a dangerous and ill-founded plea for identity of nature. The powerful effect of many remedies on various disorders connected with the nervous system, on this ground, would argue the same proximate cause to exist in all.

“ Almost all the authors who have treated of this subject, agree in assigning arthritic matter as the proximate cause of the disorder, but particularly Dr. Leidenfrost. Dr. Degener is likewise of this opinion, having observed at the affected place, a tumour similar to that in the joints of gouty people. Dr. Siebold saw, in a patient suffering the most violent pains at the supercilia, a node perfectly like that of arthritic limbs; and Dr. Ludwig fairly tells us, that the patients suffering this disorder became gouty soon after. The disease seems to have an arthritic origin in the cases related by Drs. Bohmer and Lavagan, who found the pain disappear when the usual arthritic symptoms returned.” Dr. Hosack coincides partially with this opinion, thinking that in one case, Mr. Apthorpe’s^u, gout was intimately connected with Neuralgia. Dr. Rush, in his chapter on gout^y, expresses his opinion, that Neuralgia is of gouty origin, and the greater frequency of gout in the female sex, according to his ideas, is sufficient to account for their greater exposure to Neuralgia. As this hypothesis is not applicable to every case, at least as the gouty diathesis cannot be detected in many instances of Neuralgia, it may be safely pronounced inadequate to explain the mystery.

^t Med. & Phys. Journal, No. xxx.

^u Amer. Med. & Philos. Register, vol. iv. No. 11. p. 299.

^y Medical Inquiries and Observations, vol. 2.

Exanthemata in a few cases have had some influence on the disease, but the irregularity of that influence leaves us equally uninformed as to the probable reason. The disappearance of a miliary eruption in a case of M. André's, removed the pain, which returned with aggravated violence on the recurrence of the eruption. "Bonnard and Lavagan relate instances of herpetic eruptions on the arm having preceded the disorder; and the German translator of Dr. Fothergill's works saw it appear after a retrograde itch: the pain discontinued when the itch broke out again, but as soon as it was removed by proper remedies, the pain immediately returned; and the disease lasted in this way from the nineteenth year of age to the twenty-seventh."

Menouret and Selle assign scro^fulous acrimony as the cause of Neuralgia, in two instances.

Venereal poison has been considered the origin of this disease in Mr. Watson's^x cases, which were cured by the administration of mercurials.

"Dr. Lentin relates a case in which a purulent salivation preceded the pain, by the appearance of which the paroxysm of the pain became less vehement and shorter: in another case the pain succeeded a running of the ears:

and Dr. Thilenius saw a patient who had a kind of gonorrhea previously to the pain, which began to run again as soon as the pain had ceased."

After this detail of opinions and of facts, from which nothing conclusive can be gathered, it would serve no useful purpose to speculate any further on the proximate cause of Neuralgia. The relief produced by an operation seems to confine the morbid action to the nerve affected, and the obscurity of nervous pathology and physiology contributes to the mystery which envelopes the subject.

The effects of the disease on the nerve are by no means ascertained with precision. In two cases, one by Dr. Gilbert of New Haven, examination after amputation discovered a condition that resembled a thickening of the nerve.

DIAGNOSIS.

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ON referring to the cases of Neuralgia, suspected or genuine, which have been submitted to the publick, we can perceive that three diseases have been confounded with it.

Trismus or locked jaw can hardly ever be mistaken for Neuralgia, owing to the involuntary and continued contraction of the levator muscles, which widely differs from the spasmodick action, violent in degree though short in duration, by which the latter is characterised.

The other diseases are odontalgia, rheumatism of the jaw and face, and hemicrania.

The age of the patient, condition of the teeth, and direction, nature, and course of the pain, will guide us in the diagnosis. Although, as before observed, young persons have been afflicted with Neuralgia, it is more inclined to fasten itself on the nerves of the aged. If there be any carious teeth, as they may operate to a certain extent on the disease, their extraction being premised, a decided opinion can be formed. In odontalgia, the pain is confined to the jaws, extending, by nervous sympathy perhaps, through the alveolar processes of both ossa

maxillaria—it cannot be moderated by pressure on any particular spot—it is acute, unremitting, and often unceasing, until the offending tooth be removed. In Neuralgia, the pain, though often referred to the jaws, is seldom confined to the neighbourhood of the gums; its direction is in the course of some of the large nerves connected with the integuments and muscles; it can often be moderated by firm pressure on some principal trunk, and its recurrence by paroxysms will satisfy the discerning physician. In a case reported by Dr. Jackson, “the pain had the most important characteristics of Neuralgia. It was uncertain as to the time of its attack, sudden, coming by strokes, or darting, and excruciating in degree. It was mostly, though not wholly, confined to the portio dura of the seventh pair of nerves. At the same time it is impossible not to ascribe the pain to the tooth, which was so long a time retained under the gum.” The absence of convulsion in the muscles of the face in odontalgia, however, may be considered the chief diagnostic symptom.

More difficulty exists in deciding between Neuralgia and rheumatism. They are both acute diseases; both may produce convulsive actions of the mouth and cheeks; the paroxysms of both may become accumulated in frequency for some space of time, leaving an inter-

val of entire rest ; both may be relieved by pressure on the cheek ; both may be excited by the intervention of trivial causes ; and both may be controlled by the same remedies. Where, then, shall we look for a diagnostick sign ? The warmth of a bed generally heightens the acuteness of rheumatism ; Neuralgia is little affected in degree of violence, by the accidental circumstances of heat or cold. The rheumatick diathesis is usually aggravated by a change from a dry and clear atmosphere to damp and rainy weather ; while the other disease, though sensibly affected, does not obey any such law of exacerbation or diminution. In most instances of obstinate rheumatism, swelling of the part affected is a certain consequence ; but in Neuralgia of many years duration, no alteration of the integuments is perceptible. In rheumatism, a patient is sensible of a tenderness of the surface, whether he be suffering from a paroxysm of pain, or be at perfect rest ; while in Neuralgia no such tenderness is complained of. Should, however, the patient consent to a trial of the operation for Neuralgia, he will be satisfied as to the nature of the disease, by the effect which a division of the nerve will have upon the paroxysms.

The periodical nature of hemicrania ; its being confined to either side of the scalp and face ; the absence of those acute spasms noticed in Neu-

ralgia ; its recurrence at a regular hour of the day, generally at noon ; and its yielding to cinchona and alterative medicines, are deemed sufficient diagnostick distinctions between hemicrania and Neuralgia. Dr. Curry, of Guy's Hospital, is of opinion, that hemicrania is only a neuralgick affection of the nerves supplying the scalp and temporal muscle.



TREATMENT.



Is Neuralgia a disease of the whole system, or is it to be considered a local affection, confined to the nerves ? According as this question shall be determined, will be our indication. If we are summoned to a case in which the patient complains of neuralgick pain, suddenly showing itself in the part ; and if he be inclined to gout or rheumatism, we may safely treat the disease, as one connected with the arthritick or rheumatick diathesis. At all events, in the employment of remedies, as palliative or curative, the distinction will be serviceable in regulating the class of medicines which should be most extensively tried, and most assiduously persevered in. Unfortunately the most marked

cases are those where no other habit of body is present, and where the progress has been so slow and regular, as to preclude even reasonable hopes from any application except the knife.

The tedious and *innocent* advance of Neuralgia, has afforded ample scope for medical experiment; and of the great variety of remedies put in requisition, the effect has been various in the hands of different practitioners. The malady is so capricious, that at one period, nothing but the most powerful impressions appear to produce any alleviation; while at others, applications the most simple and soothing lull the sufferer to rest.

As an assistant in the exhibition of palliatives, Dr. Rush's observation to Dr. Jones, is highly important, and may suggest many useful applications in this and analogous diseases: "A weak sensation of a pleasurable nature may predominate over a painful one." The catalogue furnished by that venerable martyr to Neuralgia, shows the assiduity with which he embraced every possible means of solace, and answers as a useful guide and beacon to other practitioners. He has established one fact, that, "every thing in this wayward, incoercible disease, has a limited season of utility, and is forthwith either inert or detrimental, or of trifling avail."

The arrangement of articles from the *Materia Medica*, employed to cure or relieve Neuralgia, is that adopted by M. Alibert^a, in his able and learned work on Therapeuticks.

1. *Of the substances derived from the vegetable and mineral kingdom which act on the tonick power, or fibrillar contractility of the stomach and intestines*, Cinchona has been fruitlessly employed. It has been exhibited either in the form of powder, or the compound tincture, or conjoined with the volatile alkali, as recommended by Dr. S. Fothergill. I do not discover that Iron has been relied on, or faithfully tried. The extensive agency which that mineral has exercised in the prescriptions of modern practitioners, and its wonderful, even unexpected, beneficial effects on some occasions, would seem to direct the attention of physicians to its employment. The contrary, however, has happened. Its prospect of affording benefit is quite as rational as that of many other remedies, which have been administered with some success.

2. Catharticks, constituting the *class of medicines which act on the myotility or muscular contractile power of the intestinal canal*, have been found of much service.

When we reflect on the universal connexion maintained by the alimentary system, we can

^a Nouveaux élémens de la Thérapeutique, et de matière médicale, &c. Paris, 1814.

readily conclude that powerful impressions made in that quarter, would affect the nerves supplying every part of the body. Dr. Jones, in his trials, entertained a high opinion of a moderate purgative; and was sensible of the beneficial consequence of its operation on the intestines, even when its cathartick effect was hardly apparent.

3. *Vegetable and mineral substances which act on the stomach and intestines, by their poisonous qualities.*

Of the efficacy of this important class of remedies, ample experience is on record, in the endeavours to cure or relieve Neuralgia by cicuta or conium maculatum, datura stramonium, atropa belladonna, hyoscyamus, and arsenick.

Baron Storck, of Vienna, having made known his experiments on the anti-cancerous virtues of hemlock, Dr. Fothergill and others, relying on the reputation of the Baron, placed their confidence in its properties. They were aware that so active a poison, if judiciously exhibited, must produce decided effects on the animal œconomy; and accordingly, Dr. J. Fothergill fully believed that Cicuta would cure his “painful affection of the face.” Dr. Jackson’s remarks, and experience with this remedy, are very useful; and his boldness in its exhibition is an evidence of the advantage and harmlessness, with which a watchful physician may administer the

most dangerous medicines. He is of opinion, that Dr. Fothergill could not be mistaken in regard to the operation of hemlock; and is strengthened in that idea, by the opposite results reported by two able colleagues in the healing art. The various quality of the extract is assigned as one reason for this difference. The imported *Extractum conii maculati* is generally very inert; therefore whenever it is prescribed, the physician should be well satisfied as to the good quality of the article. The cautions given by Dr. Fothergill for the preparation of this extract, are, that the plant should have acquired its full vigour, and should be rather on the decline: "just when the flowers fade, the rudiments of the seeds become observable, and the habit of the plant becomes yellow. It has then had the full benefit of the summer heat; and the plants that grow in exposed places, will generally be found more virose than those that grow in the shade. The less heat it undergoes during the preparation, the better."

The timidity of some practitioners, the want of confidence of others, besides the indifference and carelessness of a third set, are additional causes of the failure of the medicine.

"It may be most prudent to begin with a single grain of the inspissated juice, but we may give five grains for the second or third dose; and afterwards we may add at least five grains

to every dose, until we produce an effect on the system." " When given in a full dose, it occasions slight nausea, a giddiness more or less severe, and often a loss of muscular power, so that the patient cannot stand. It seldom does good unless used in such a dose as to produce these effects in some degree, and indeed in as great a degree as can easily be borne." " I have ventured in urgent cases to repeat the dose every half hour. I believe it must always be abundantly safe to repeat them once in two hours, if the patient and attendants are careful and watchful, and well informed in regard to the effects^b."

Dr. Fothergill seldom went beyond seventy grains in the course of twenty-four hours. Dr. Jones ventured to one hundred—but Dr. Jackson administered *three hundred* grains in *six* hours. " I conceived that if the system could be made to feel the effects of this medicine suddenly and powerfully, there would be a chance of effecting a real cure; a better chance than from giving a much larger quantity during a long space of time. Accordingly, after having exhibited the medicine for about a fortnight, and increased the dose to six and eight pills of five grains each, and having ascertained that whenever any sensible effect was produced, it took place within fifteen or twenty minutes after the

^b Dr. Jackson on Tic douloureux. New-England Journal.

dose was swallowed, I resolved on a bold trial of this medicine. I directed eight pills to be taken as soon as the pain should come on, and that the same should be repeated, at the end of twenty-five or thirty minutes, if the pain should continue, and the medicine should not affect the head or stomach. At this time the paroxysms of pain had become inexpressibly severe and very frequent. My directions were carefully followed. The intervals of pain were such as sometimes to prolong the intervals between the doses ; but in the course of six hours, sixty pills were taken, making three hundred grains. After the last dose, the patient was quite overcome by the medicine. She became dizzy and faint, and was unable even to sit up. She laid upon a sofa for some time, in a state of intoxication, but without suffering any very unpleasant effects afterwards. The respite from pain and from susceptibility of pain, was more perfect and longer than at any time for several weeks before. But the disease was not conquered ; it returned the next day with considerable severity. I had directed the medicine to be repeated as soon as the pain should return, which was done, and in the course of the day forty-eight pills, two hundred and forty grains, were swallowed. These gave entire relief, and affected the head, but not so powerfully as on the day before. The disease seemed now to be

vanquished. This was in November 1808, and for two months the pain was not felt, except in very transient twinges, which were never repeated for any length of time. About the middle of January following, this lady walked out on an extremely cold day, and the disease returned before night, with very considerable force. The hemlock was employed again, but in smaller doses at first. In three days the disease gave way, without having required very large doses of the medicine. Since that time it has never recurred ; that is, during more than three years."

The tincture of hemlock, prepared in the same proportions as the *tinctura Digitalis purpureæ*, has been found equally efficacious in Dr. Jackson's practice. In another case of Neuralgia, he began with thirty drops at a dose, "to be frequently repeated, and presently increased, if relief be not obtained. The dose was gradually increased to three hundred drops. It never gave relief except when it affected her head, and always when it did. The disease yielded in two or three weeks after she commenced the use of the hemlock, and since that time it has not returned."

By these two interesting cases, the timidity and unbelief of practitioners should be diminished ; as since whatever benefit may ulti-

mately result, the precedents afforded by a highly respectable physician, will justify any trial to the same extent. Perhaps, from the reasons before stated, other practitioners have given opposite opinions on this subject, and have been inclined to believe, that the generality of the cases reported to be absolutely cured by hemlock, were actually rheumatick. A similar belief has been entertained with regard to the cures said to have been effected by Stramonium.

Datura stramonium has been extensively employed with this view in the State of Connecticut, especially in New-Haven, and its vicinity. A disease sometimes appears in young females of a plethorick and rather irritable habit, strongly resembling Neuralgia, which yields to Stramonium, and may have given rise to a belief in the anti-neuralgick virtue of that vegetable. A case of this I have never seen, and cannot point out any distinctive marks; I know no reason why it may not be genuine Neuralgia, symptomatick of some uterine derangement. We are authorized, however, to express some doubts as to its efficacy, in general, as well as of *Belladonna* and *Hyoscyamus*. According to Dr. Darwin, "five grains of the powdered leaves of *Atropa belladonna*, are recommended in some foreign publications, to be repeated

once in two days ; and are said to be successful.”

“ After a few days,” says Dr. Jones, “ arsenick produced so much excitement in the vascular system, as to render the complaint intolerable.”

Mr. M‘Kechnie’s case^e, is more satisfactory and consolatory. “ On the 1st October, 1807, I prescribed the following mixture :

℞ Sol. min. arsen.

Aq. pur. ā. ʒj. M.

Of this the patient was directed to take fifteen drops in a basin of gruel, three times a day, till sensible signs of the operation of the medicine should be observed. For a few days, there was no alleviation ; but as the dose was increased, the paroxysms became less frequent, and more tolerable. On the 15th, the pains were completely gone ; but to prevent a relapse, I thought proper to persist in using the mixture. On the 17th, violent pain seized the stomach ; the pulse was strong, and the thirst intense.—Blood was abstracted, castor oil was prescribed, and copious draughts of demulcent drinks were recommended. The medicine was also intermitted ; but in a short time the patient was so much recovered, that it was resumed in small doses.

“ 14th May, 1811. The painful affection of the face, has never returned since the arsenical

^d Zoonomia, Cl. 1. 2. 4. 11.

^e Med. & Phys. Journal, vol. vii. No. xxvii. p. 302.

solution was desisted from ; and the general health has been in every respect good."

In those instances where the same happy effects are not experienced from the use of arsenick alone, its combination with digitalis, as recommended by Dr. Currie, " by bridling the circulation," might be productive of marked, and perhaps beneficial, consequences. The stimulating property of arsenick being blunted by its adjunct, it might direct its energy towards the nervous system.

4. *From that class of remedies which act particularly on the vital properties of the large intestines*, much assistance has been derived. Enemata were strongly recommended to Dr. Jones by Dr. Rush. He employed them of different degrees of pungency, and sometimes they were made so irritating as to be followed by bloody, mucous discharges. The stimulus of distention, besides the irritating quality of the injections, at first was beneficial, but, like many other useful prescriptions, they were soon ranked among the " inert or detrimental."

5. Of venesection and leeches, the only *curative measures particularly founded on the vital properties of the venous circulation*, little is recorded in relation to their efficacy. Their indication depends so much on the accessory circumstances of each individual case, that no

remarks need be hazarded as to their employment.

6. *Of the substances derived from the vegetable, animal, and mineral kingdoms which act on the vital properties of the nervous system,* opium, castor, musk, camphor, assafoetida, and zinc, have been used in the treatment of Neuralgia.

The usual anodyne property of opium has been much relied upon, in overcoming the paroxysms of this disease. Astonishing quantities have been administered; showing the wonderful ability of the system to resist powerful medicines, while under the operation of an internal excitement. In the case related by Dr. Hosack^f, which was cured by the vol. tinc. of Guaiac, many ounces of laudanum were given; the intensity of pain prevented much soporifick effect, and it failed to produce a cure. Opium joined to nitre, whose sedative quality through the medium of the urinary organs is very decided, Dr. Jones found more efficacious than when administered alone. Dr. Duncan^g conducted a case to a happy termination by the “black drop,” after it had resisted the power of opium simply.

^f Amer. Med. and Phil. Reg. loc. cit.

^g Dublin Med. and Phys. Essays, vol. 2.

^h R_x Opii purificati uncias quatuor; pimenti et cinnamomi utriusque drachmas duas, croci et cort. aurant. utriusque drachmam unam; spiritus vini libram unam.

Digere per dies septem; tunc cola, et adde sacchari chrystalizati uncias duas vel tres.

Annexed to Dr. Kelly's dissertation is a detailed case which was treated by opium, united to camphor, cinchona, and aloetick purges *after the operation*.

The remaining articles have been used without success, but their influence in other diseases of a nervous character would designate them as not deficient in energy for this. Their administration is certainly justifiable on analogical grounds, but they must be pushed to the extreme which the constitution will admit.

In the Medical and Physical Journal, No. 183, a cure is said to have been effected by a mixture of equal parts of zinc, valerian, hyoscyamus.

7. The next class is composed of such medicines, derived from the vegetable, mineral, and animal kingdoms, as act on the vital properties of the cutaneous system, considered as an exhaling organ.

The analogy traced by Dr. Hosack between Neuralgia and rheumatism, has induced him to repose confidence in the volatile tincture of guaiacum officinale. He has successfully treated one severe case by this remedy, and its active sudorifick and alterative qualities entitle it to high consideration. "A tea-spoonful of this

R. Opii uncias quatuor; succi cydonii mali, libra; quatuor; digere per tres septimanas; tunc adde croci, nucis moschatae, caryophyllorum utriusque unciam; iterum digere per septimanam, cola per canulam, et evapora liquorem colatam ad syrupi spissitudinem.—*Kelly. Dissertat. Inaug. de Neuralgia. Appendix.*

medicine was given every two hours in half a glass of wine." Its use, however, is evidently indicated in those instances, where a gouty or rheumatick diathesis is connected with Neuralgia.

A bag of common salt held between the cheek and the gums, by the copious flow of saliva it occasions, has produced alleviation.

Dr. S. Fothergill strongly recommends the aqua ammoniæ causticæ as a powerful remedy ; and Dr. Jackson in one case confirms the strong bias in its favour expressed by Dr. F.

8. Remedies particularly applied to the vital properties of the nervous system, considered as an organ of sensation.

Blisters, sinapisms, and issues, all acting with a two-fold intention, as irritants and as drains, have been found of little service in Neuralgia. Issues promise more benefit than the other applications. Dr. Jones made trial of several at the same time, which, though not fulfilling the expectations he had formed, were for a season of some benefit.

Electricity, both in form of sparks and of the *aura*, has been much resorted to. Dr. Haighton's experience is rather against its utility, and Drs. Rush and Jones consider it a very feeble resource.

The salutary influence of the magnet on the nervous system, is more acknowledged. Messrs.

Thouret and Andry, and the Abbé Lenoble, have made extensive experiments on this subject. They have described cures of odontalgia, head ach, and tic douloureux, by means of the artificial magnet. In a case of severe pains in the upper jaw, that baffled every attempt at relief by other means, M. Lenoble contrived a magnetick coronet, collar, cross for the breast, and two plates for the legs, which removed every symptom of the complaint. Professor Sparmann employed the magnet in two cases of *dolor faciei*, and the relief it afforded was very striking, though a complete cure was not effected^k. On this head, Dr. Jones is explicit and instructive. “ For a considerable time it lulled the pain like a charm, and its operation was so prompt and effectual in repelling, at least, minor attacks, that I found in it a valuable auxiliary. As often as I was roused from sleep by darting pains or twinges, I applied it with such success, that at length I slept with it in my mouth, and in this way, passed the night comfortably ; but after a certain time, it seemed gradually to lose its efficacy as a remedy, though its magnetic virtue remained nearly the same ; or it may be, the pain becoming more severe, greater power in the remedy was required to produce the same effect ; and yet on procuring a larger magnet, which probably concentrated

^k Alibert, Nouveaux élémens de la Thérapeutique, &c. Tome II. p. 450.

more magnetism within a given compass, this proved too powerful for my purpose. The part affected could not bear the stronger at all, and the weaker served as the pain was going off, to check it the more suddenly." Some attention, therefore, is required in regulating the size of the magnet, and had the Doctor with more assiduity graduated this instrument to the degree and severity of his sufferings, more assistance might have been received.

Analogous to this plan of treatment, is that recommended by Heurteloup', whose curious and successful device was the wearing of an iron mask on the face.

Galvanism, which seems to be a medium between electricity and magnetism, in the energetick effects it displays analagous to those of the first, while its silent and unseen agency resembles the latter, might be supposed of more utility than either ; but experience does not warrant the conclusion.

Cold, hot, and tepid bathing, fomentations, and a heated atmosphere have been tried, and with various success. The general rule concerning the employment of cold water in persons of nervous habits, is applicable to Neuralgia ; where it produces an increase of suffering, its use must be suspended. Pediluvium in warm water, from its soothing and grateful influence on the sys-

tem, is strongly recommended as an auxiliary ; and it may be assisted by wrapping the head in cloths wrung out of warm water, or warm brandy and water. Bathing has been too little watched for any decided report concerning its utility. The preservation of an uniformly high temperature in his chamber, Dr. Jones found rather to increase his sensibility, than to lull the pain. After a few days, the slightest breath of cooler air would renew his agony with increased violence.

Frictions and embrocations, camphorated and combined with opium, maintain their standing for a limited period, and then must be abandoned as useless.

Incisions in the gums, and neighbourhood of the part immediately affected, have been productive of some benefit ; but so short lived was the relief, as hardly to give them any character as a resource.

Ice held in the mouth or on the diseased nerve, by benumbing the part, has prevented the immediate return of the paroxysms.

Tar has been successfully employed in one case communicated by Mr. Colville¹, after many other expedients had failed. It was adopted in consequence of the resemblance of the disease to rheumatism. If I may venture an opinion, although the symptoms detailed

¹ Edinb. Med. and Surg. Journal, vol. x. No. 39.

correspond with those of Neuralgia, the disease must have been on the decline, or must have been intimately connected with rheumatism : otherwise, an application so simple and inert would hardly have manifested any decided operation on an affection so obstinate, and deeply rooted, as confirmed Neuralgia.

9. *Of the substances which act on the cutaneous system, considered as an absorbing organ*, mercury has been resorted to for the cure of this disease. Mr. Pearson, in his paper before mentioned, describes the condition of several patients whose affliction was removed by salivation. Mr. Watson^m also treated the disease in the same manner. Hufelandⁿ, in Germany, has published the cure obtained by the extract of *hyoscyamus niger* combined with calomel. Dr. Jones placed some confidence in the apparently universal agency of this mineral. After salivation had been gradually produced by the corrosive muriate, and moderately maintained for a few days, his system became so irritable, that the attacks of his dire enemy were more frequent and excruciating than before.

^m Journal de Medicine, 1793. March.

ⁿ Journ. de Med. vol. xvi.

SURGICAL TREATMENT.

THE system of treatment described in the foregoing pages, in conformity with the twofold plan of managing hydrocele, may be denominated the *palliative*. The remaining section of this dissertation will be devoted to the *radical* or *surgical* treatment.

The history of the operation is coeval with the first lucid description of Neuralgia. In an instance related by Sauvages, the celebrated surgeon Mareschal divided the nerve; the patient, who had suffered excessively from the disease, slept well that night; but within a few days the disease returned. “Tandem post biennium Andræas ope lapidis caustici ad nasi latus inusti, aquæ mercurialis supra escharam affusæ, incisionis ad os productæ post duodecim dies, quibus hæ operationes institutæ sunt, statimam sublevit, quæ denique omnino sanata fuit; cum chirurgus initio denudatum stylo attingebat, paroxysmum trismi pro lubitu excitabat, cicatrice obducta, *ægra sana vixit*.” André employed caustick as his great curative

indication, and his practice prevails in France at the present period. In an aggravated case of Dr. Haighton's, reasoning on the apparent pathology of the disease, he was convinced that a division of the nerve would be effectual in its consequences; nor was he deceived. The testimony of many surgeons is united on this point. Dr. Haighton^p, besides his own experience, quotes, from Sabatier's anatomical treatise, one instance from De Haen's *Ratio Medendi*; another by Mr. Ritch, a Polish surgeon of high respectability; and a third in Paris, in which the success was only temporary. M. Louis^q practised this operation with success on a prior of Prémontrés. In addition to Dr. Haighton's authority, many excellent surgeons admit, that where the nerve can be effectually divided, a perfect suspension of misery will be attained, at least, until the nervous re-union be effected.

The most strenuous advocate for the operation, in this country, is Professor Mott. His success has been so unequivocal, and his opportunities of witnessing the disease so comparatively numerous, that his unqualified opinion in all cases of Neuralgia, is '*divide the nerve*;' then, if necessary, employ the other remedies to destroy or diminish the susceptibility to re-

^p Med. Records and Researches.

^q Gazette Salulaire, No. 36. 1766.

turn, which will be accomplished most certainly by hemlock and other narcoticks. Dr. Mott has operated on five patients. He has divided different nerves on Dr. Jones' face *eleven* times, but the disease seems so rooted in the old gentleman's constitution, as to require frequent repetition of the operation. He has become so accustomed to it, that whenever the inveterate tormentor developes itself, he sends for his surgeon without delay, knowing, that from his hands he shall receive relief. Mr. George G. Graham, practitioner in Orange County, while a student of medicine, divided the infra-orbital nerve with perfect success; and Dr. Post, associated with Dr. Mott, operated lately on a gentleman, whose *left* cheek was diseased, and he instantly arrested the spasms.

The degree of certainty promised by the operation, as resulting from the physiology of nervous re-union, becomes an interesting question. Dr. Haighton's masterly and conclusive experiments on the re-union of divided nerves, have completely established that point: and it is a settled dogma in physiology, that by the growth of fresh matter, or by the approximation of the divided ends, the functions of a nerve are restored. Mr. Abernethy, however, arguing from the renewed sensibility and mobility of the ring finger on which he operated, thought that the *anastomosing* branches had become en-

larged, and, officiating in lieu of the original trunk, rendered a complete cure impracticable. Had that learned surgeon removed a portion of the *trunk* of the ulnar nerve, and then been baffled in his anticipated cure, his apprehension would be well founded. There is some difference between the effects of a divided trunk and of its branches. Nervous influence can readily be re-communicated by the preservation of the former, should the latter be effectually operated upon. Moreover, as the nerve of the opposite side of the finger was derived from the radial nerve, the difficulty of solving the mystery is diminished.

In opposition to the utility of operating, the uncertainty of *immediate* relief from a division of the nerve has been particularly urged. For, say they, the re-union is so speedy and so certain, that nature will commence her counter-ailing process before the desired object is completely attained; thus tantalizing the patient still more, and adding unnecessarily to his sufferings. The author of a thesis^r supported before the Faculty of Medicine of Paris, expresses his doubts of the success of the operation; he pretends that it was repeated five times on one patient, and asserts that he finally owed his cure to the warm baths of Plombières.

^r Utrum in pertinacibus capitis & faciei doloribus aliquid prodesse possit, sectio ramorum nervi quinti paris? proponebat Veillart, 1768, conclusio *negativa*.

In the same dissertation are the histories of two other patients, on whom a Parisian surgeon practised without success the division, and afterwards the cautery on the supra and infra-orbital nerves, the malar branches of the portio dura, and the mental nerve^s. The preceding remarks on the success of the operation are a full reply to such objections.

Wherever a considerable portion of the nerve can be abstracted, a greater duration will assuredly be given to the cure. This cannot be attempted on many of the nerves of the face; because the ramification is so immediate and extensive, as to preclude a successful endeavour to remove much of the frontal, infra-orbital, or mental nerves. The branches of the pes anserinus are intimately connected with the parotid gland and duct; also by some very beautiful and extraordinary anastomoses with the other facial nerves, so that a similar hinderance occurs here. The only nerve about the head which affords the slightest chance for effectual and final division is the portio dura, in its passage between the stylo-mastoid hole, and the angle of the lower jaw. When the disease is in any other part of the system, if half an inch of the principal trunk supplying the affected spot could be removed, there would be little dread of its return. A repetition of incisions through a nerve,

^s Richerand Nosographie Chirurgicale, T. II. p. 204.

by insulating several portions, would be another means of protracting a renewal of the disease ; and in the sub-orbital nerve, this has been done by Doctor Mott, when operating on Doctor Jones'. This improvement, I believe, is attributable to Doctor Mott, and its application must be productive of decided and happy consequences.

It is a curious circumstance connected with the operation, that although the nerve shall be completely divided, from some cause, the chain of morbid actions will not be interrupted for several, perhaps twelve or fourteen, days. This has induced some to pronounce hastily, that the operation has failed. Any attempt satisfactorily to explain this occurrence, I think would be fruitless.



Operation on the infra-orbital nerve.

The participation of this nerve in Neuralgia, may be detected by the course of the pain up the side of the nose, sometimes following an arched direction between the eyebrow and upper lid, or in either the brow or lid, and extending along the zygomatick arch : or it may be confined to the muscles passing between the os

malæ and the angle of the mouth, involving the buccinator and masseter. Pressure may be applied to the infra-orbital foramen, during which the pain will be arrested, provided the disease depends on that nerve. A tremulous motion of the upper lip on one side, most commonly attends this variety of Neuralgia.

To Doctor Haighton we are indebted for an excellent view of this nerve, and a delineation of the point for division. "He measured the space between the inferior edge of the orbit and the superior edge of the foramen in thirty skulls, and found the distance in sixteen skulls $\frac{1}{4}$ of an inch, which he considers the medium distance from the upper part of the foramen; and if we allow $\frac{1}{8}$ of an inch for the breadth of the foramen, and $\frac{1}{8}$ below its inferior part, half an inch from the lower edge of the orbit will be a proper place for performing the operation. Having endeavoured to establish a rule for determining its distance from the orbit, it may be proper to ascertain its situation with respect to a line drawn from the *inferior part of the internal angular process of the os frontis*, obliquely across the orbit, to the *centre of the os malæ*. The measurement of this line in thirty skulls, did not vary more than $\frac{1}{8}$ of an inch, and it was found that a line drawn downward perpendicular to this oblique line, at the distance of $\frac{7}{8}$ of an inch from the internal angle of the

eye, passed across the orifice of the sub-orbital foramen."

This point being settled, Dr. Haighton's direction for operating, is "to make an incision of $\frac{3}{4}$ of an inch in length, carried obliquely downwards, (on account of the oblique course which many of these nerves take, in their passage from the foramen to the ala nasi,) the centre of which must correspond with the foramen, only $\frac{1}{4}$ of an inch below it. The incision must be made down to the bone, otherwise we cannot be certain of dividing the nerves, as they are situated very deep."

The deformity produced by a large cicatrix, in this method of operating, exposes it to objection. Professors Post and Mott have employed the following mode with the happiest success, and perfect facility.

The only instrument required is a sharp-pointed bistoury or phymosis knife, either in a stiff handle, or well secured.

Having ascertained the situation of the infra-orbital foramen, by Dr. Haighton's rule, and also by the depression which can be distinguished in most subjects, let the nose be held aside by the assistant who secures the patient's head. Introduce the bistoury about midway between the nose and the nasal margin of the foramen; carry it down to the bone, and pass the point *close* to the bone, in order to get it under the

nerve. The point must then be elevated a little, though it must not pass through the skin from beneath; by a little rubbing motion with one finger upon the point of the knife, at the same time cutting gently with the knife, the nerve will be divided.

As a considerable branch of the internal maxillary artery accompanies the infra-orbital nerve, its division will be shown by a copious arterial hæmorrhage; and a peculiar acute pain accompanies the section of the nerve, in addition to the difference, perceptible to the operator, between cutting a nerve, and any other soft solid. The upper lip must now be examined by touch. If the patient acknowledge a destruction of sensibility, the surgeon may withdraw his bistoury; otherwise, the cutting must be repeated, until from numbness, he is satisfied that the nerve is divided. By asking the question previously to withdrawing the knife, the patient has no reason to conceive that any disappointment attended the first attempt, and the repetition of incisions he may suppose to belong regularly to the operation.

Being certain that the nerve is thoroughly divided at the first point of section, make two or three incisions through it lower down; and thus endeavour, as Dr. Jones expresses it, to “insulate a portion of it, (included as it were in a parenthesis,) with respect to the common senso-

rium." Since the infra-orbitary nerve as it leaves the foramen expands immediately like a fan, and distributes its branches to the surrounding parts, the incisions last mentioned may be extensive, retaining the knife still underneath the skin. The knife is then to be withdrawn through the first opening, and the lips of this diminutive external wound can be drawn together, and secured by adhesive plaster.

The only obstacle to a free section towards the nose, is the facial vein, which, beginning at the inner angle of the eye, holds a diagonal course towards the angle of the jaw. A wound of this, however, will not be attended with any serious consequences; it will only add to the ecchymosis already arising from the artery, and can be compressed by a slight force applied to the spot. The suffusion of blood will be removed by absorption in a few days, and its removal may be aided by any moderately stimulating lotion.

The great advantage of this method over Dr. Haighton's, will be apparent from the impossibility of any large cicatrix being the consequence.

Operation on the Frontal nerve.

This final distribution of a highly useful and important branch of the trigemini, after it has entered the orbit through the foramen lacerum, appears to cling to the roof of the orbit, passing between the bone and the periosteum, of course above the levator muscle of the upper eyelid. It leaves the orbit through the supra-orbital foramen, which in many skulls is only a notch, closed below by a ligament. The situation of this hole or notch may be ascertained, with tolerable precision, by finding the sub-orbital foramen; as it is about $\frac{1}{4}$ of an inch *within* a perpendicular line drawn from the latter, and continued up the forehead.

Pass a bistoury or knife about $\frac{3}{4}$ of an inch within the orbit, immediately beneath the superciliary ridge of the os frontis, and divide the nerve outwardly. A numbness must be felt on the forehead and eyebrow, and down the nose, before the knife is withdrawn. The connexion between the nerve and the bone, is sufficient to impress the necessity of keeping the point of the bistoury as close as possible to the bone,

r Meckel. Tractatus Anatomico-physiologicus de quinto pare nervorum cerebri. Sec. xxxix.

and the dense periosteum affords additional resistance, while dividing the nerve. The ophthalmic artery will bleed profusely for a few minutes, and when its flow outwardly is repressed, it will produce so much ecchymosis as to blacken the eye to a considerable extent.



Operation on the Mental nerve.

The foramen through which emerges the inferior-maxillary branch of the fifth pair, is situated generally about midway between the alveolar processes of the jaw and its base, in a line between the cuspidatus and anterior bicuspid teeth. The nerve may be divided by turning down the lip, and introducing the bistoury about the first bicuspid tooth, with the back towards the angle of the jaw. Keep the knife close to the bone, and by following the excavation of the jaw, the nerve will be divided by a cutting motion rather from the bone.

In the aged edentulous subject, from the absorption of the alveolar processes, no reference can be made to the teeth, in finding the mental foramen. It is situated generally in the same line with the supra-orbital hole, and consequently can easily be discovered.

Operation on the Portio Dura.

A mere description of the complicated and extensive distribution of this nerve, will be sufficient to justify a doubt of any operation being so devoid of danger, or troublesome consequences, as to authorize its performance.

When neuralgick sensations are traced from just above the angle of the jaw, in transverse lines across the face, upwards through the temples, downwards along the base to the symphysis of the chin, backwards behind the ear; exciting especially a profuse discharge of saliva^s, and frequently, from their severity, absorbing all perception of distinct linear direction, but communicating the idea of the whole cheek being in a paroxysm of Neuralgia, a surgeon may pronounce the portio dura to be the affected nerve.

A brief display of the organs contained in the side of the face, seems necessary for the purpose of conveying a distinct view of the embarrassment and difficulty, attending any projected operation on the portio dura.

The parotid gland, whose agency in furnish-

^s I have not noticed this in any description of Neuralgia; but a moment's reflection, I think, will show, that a diseased nerve passing through the parotid gland, imbedded in its substance, must affect the flow of saliva from that gland.

ing saliva is superior to any other destined for that use, occupies the whole space from the mastoid process of the temporal bone, penetrating to the “very root of the external auditory sinus, almost to the internal carotid artery and jugular vein’;” it is sunk behind the lower jaw, and adheres to the pterygoideus internus muscle, while it reaches forwardly, by means of the *socia parotidis*, nearly to the anterior edge of the masseter muscle, and upwards to the zygoma. The ducts from its numerous lobuli unite, and are continued in one trunk to the buccinator muscle, which it perforates nearly opposite the second or third *dens molaris*. “Its course will generally be defined, by a line extended from the junction of the lobe of the ear and figured portion, to midway between the root of the nose, and the angle of the mouth.”

The *arteria transversalis faciei* “is generally placed midway between the parotid duct, and the zygoma. At this part it lies between the *socia parotidis*, and the masseter muscle.”

“The *portio dura*, when passing from the foramen stylo-mastoideum, lies behind the parotid gland; but it immediately dips into its substance. It continues a single and undivided trunk, for about half an inch of its course. This part of the nerve runs in a slanting direction, downward and forward, imbedded in the gland.

Where the portio dura is escaping from the skull, it is deep seated, and nearly in contact with the arteria posterior auris, and where that artery and the occipital arise by a common trunk, the latter vessel is quite in the vicinity of the portio dura. By the styloid process," (which is the barrier between the external and internal carotids,) "the nerve is separated from the internal carotid artery, and jugular vein. About midway between the ascending plate of the jaw-bone, and the mastoid process, the portio dura is nearly opposite to the posterior facial vein, and the external carotid artery.

"It is at this point, at a place where the nerve is still deeply covered by the glandular substance, that it divides into its branches, which separately perforate the gland, to reach the cheek, and other parts on which they are to be distributed. The largest of these branches inclines upward and forward, and while still imbedded in the gland, it subdivides into a numerous set of twigs, which cover as with a net-work, the zygoma and the arteria transversalis faciei. The largest of these twigs, runs nearly midway between the zygoma, and the parotid duct. The other divisions of this nerve ramify over the face, and about the throat.

"The trunk of the nerve can be reached, with safety, only by an incision beginning at the

very root of the mastoid process, and continued downward and forward, along the anterior margin of the sterno-mastoid muscle. The dissection, no doubt, will require to be deep, but in performing it, the surgeon will not experience much difficulty. The lobe of the ear will require to be pulled upward, and held forward, while prosecuting this dissection. In performing the dissection, the nervus superficialis colli will necessarily be divided, where entering the lower angle of the parotid. The glandular substance itself will be injured, and the arteria posterior auris will be cut across".

In this manner, Mr. Burns has been in the habit of removing half an inch of the nerve on the dead subject; and Professor Mott, since the inestimable *Surgical Anatomy of the head and neck* made its appearance, has exhibited to his class of surgery the mode of performing the operation. It has never been attempted in this complete and radical manner, on the living subject; although many incisions have been made in the cheek, for the purpose of dividing the branches of the pes anserinus. The outline that has been given of the anatomy of the face, exhibits the difficulty attending that procedure, and the infallible consequence must be troublesome, perhaps perpetual, salivary fistulas.

Should it be necessary, however, to divide any

the facial branches of the portio dura, it has been suggested by Dr. Mott, that it might be effected by introducing a bistoury, as in the other operations, and making the incisions in various directions beneath the skin. The prospect of an unpleasant result will be thus considerably diminished, and the fistula would probably admit of a more rapid cure.

A few observations on the propriety of employing caustick applications, will close the subject. If the object be to destroy every prospect of a recurrence of Neuralgia, and if the patient will consent to an experiment, which, if successful, must effectually annihilate the nerve, the precedents afforded by the French surgeons will authorize the attempt. It has been objected, that the proximity of some of the nerves to the bone must necessarily involve exfoliation. This consequence depends, very probably, on the management of the caustick, which should not be left so long in contact with the bone as to endanger its continuity.

After the nerve has been divided by the operation, it may answer a good purpose to interpose caustick between the extremities of the nerve, and thus combine both expedients. The tediousness of reaching the nerve from the surface by caustick, besides the torture it would inflict, possibly producing tetanus, seem to in-

terdict any proceeding different from that proposed. Dr. Jones declined the use of caustick, from dread of tetanus, nor was his fear without foundation. We should, however, impose some confidence in the practice of the French, and admit this method of destroying a nerve to an equal rank with the knife, in those cases where its employment is feasible, and unattended with danger to the bone.

As the moment approaches in which I shall be endowed with the valuable privileges within your gift, permit me, RESPECTED PROFESSORS, to exercise the grateful office of expressing my sense of the obligations under which your uniform attention and kindness have placed me! Lasting be the celebrity of the establishment fostered by your exertions, and rendered illustrious by your learning—may its character ever be equal to its transcendant usefulness, and its patronage in proportion to its reputation! May the proud consciousness of honourable endeavour shed its delightful influence over your declining years—and when the period shall arrive, commanding your retreat from the toils and distinctions of publick life, may your successors emulate your brilliant example, and perpetuate the fame of our College in the gratitude of remote posterity!

APPENDIX.



IN order to complete the view which has been given of Neuralgia, the following communication from Valentine Mott, M. D. is subjoined. It gives a very satisfactory statement of the consequences attendant on the radical treatment, and it is the only document of that description on record.

ESTEEMED PUPIL,

Since a doubt has been expressed by some as to the eventual result of the operation of dividing the nerve in Neuralgia, allow me to avail myself of this opportunity, to state the success which has attended it in my practice.

In a confirmed case of Neuralgia, in a lady about sixty years old, in 1810, I divided the infra-orbital nerve on the right side; the relief was instantaneous. Before the knife was withdrawn, she exclaimed, "I am relieved, I can now speak, blow my nose, and swallow," which had been almost impossible for some days, owing to the unspeakable agony of the disease. There were slight neuralgic symptoms for about ten days, then she became perfectly free from the slightest trace of it, and has never since had a return severe enough to induce her to resort to the operation, the pain of which she by no means dreads: for all attest that a single paroxysm far surpasses the smart from the incision. For about four months she was entirely free from the disease.

A gentleman aged about fifty, having had Neuralgia for four years, applied to me, in the beginning of the year 1811, for surgical relief. Palliative means having failed, and the disease increasing in violence, I recommended the operation as the best, and only remaining resource. I divided the infra-orbital nerve of his right cheek. The paroxysms continued for a day or two as frequent and violent as before the operation: but in a week it entirely left him. In about four months, the pain began to return, and increased in violence from time to time, but did not equal its former severity, till about six months since, when it became more severe than ever. About three months ago I repeated the operation on the same nerve: the pain went off gradually in about a week, and he says the last operation is by far the most successful.

In 1811, I divided the right infra-orbitary nerve for a lady, who had been labouring under severe Neuralgia for two or three years. She experienced no *immediate* relief; on the contrary, the paroxysms appeared to be increased in frequency, and aggravated in violence, for several days: they then began to decline, and had entirely left her about the twelfth day. *I believe the disease has never returned.*

On that highly respectable physician, and victim to Neuralgia, Dr. Jones of this city, I have operated about eleven times, and in every instance with the most perfect success.

After having been afflicted with this horrible disease for seven or eight years, and having exhausted all the resources of the *Materia Medica* to no purpose, the Doctor at last yielded to my frequent and earnest importunities, and allowed me to divide the right infra-orbital

nerve, at the advanced age of sixty-seven years. His pains were increased for several days, but about the twelfth they abated gradually, and in a few days completely left him. He continued for four or five months free from pain; but after exposure to cold, he felt now and then alarming touches of the disease, which at length became very violent. Every subsequent operation on the infra-orbital and mental nerves, has been followed with complete relief; but the intervals have been mostly shorter than the first; they do not, however, gradually shorten; several of the last operations have varied very little in the interval of ease, it being of from three to four months duration.

The violence of the paroxysms has several times been augmented for a day or two after the operation, and as the additional irritation of the division of the nerves subsides, the pain gradually diminishes. The disease always leaves him in from seven to twelve days after the operation. From the last division, however, of the infra-orbitary, about three weeks since, he received immediate ease, having scarcely a single pain afterwards.

Last winter, I divided the right infra-orbital nerve for Major B—, aged about fifty, who had been labouring under a regularly increasing Neuralgia for about four years. The operation increased his disease in every respect for several days; it then abated, and gradually went completely off in about the usual period of twelve days. Four months and more have now elapsed, and the disease has not returned.

About three weeks since, I attended, in conjunction with Dr. Post, a Colonel K—, aged about sixty, who for five years had been afflicted with severe Neuralgia

of the left infra-orbital nerve. Dr. P. divided this nerve, and it was followed with immediate relief. He experienced little or no pain afterwards.

Hoping that all the miserable victims of Neuralgia may be encouraged to resort to a surgical operation, either in the form of a simple or double division, by a single external incision, or where practicable, the removal of a portion of the nerves,

I am, with sentiments of high regard and esteem,

VALENTINE MOTT.

5 mo. (May) 1st, 1816,
259 Pearl-st. New-York.



The following list of writers on this disease, in addition to those contained in the body of this dissertation, is extracted from the Edinburgh Practice of Physick. The impossibility of obtaining them seems to render such a procedure necessary, that the occasional opportunities of satisfying curiosity on the subject of Neuralgia may not be neglected, through want of an easy reference.

Rahn; *Museum der Heilkunde*, i. e. Museum of Medicine, Vol. II. *Aepi*; *ibid.* p. 302. *Sauter*; *ibid.* also *Tissot* and *Pohlen*. *Lentin*; first in *Blumenbach's Medicinische Bibliothek*, i. e. Medical Library, Vol. I. (A periodical work, that is now discontinued,) in his *Contributions to Practical Medicine*, (in German,) Vol. I. 1797, p. 382—398. Vol. II. 1798, p. 92. seq. *Hufeland's* Practical Journal, Vol. IX. No. 1. conf. Medical and Physical Journal, Vol. III. p. 575. *Selle*; in *Neue Beiträge*, &c. i. e. New Contributions to Natural and Medical Science, Vol. I. p. 27, &c.

Vogler Blumenbach's Medical Library, Vol. II. p. 556. *Thilenius*; *Medicinische und Chirurgische Bemerkungen*, i. e. Medical and Surgical Observations, Franckfort, 1789. p. 283. *Bohmer*; in *Blumenbach's Medic. Libr.* Vol. III. p. 315—336. *Baldinger*; in his *Medical Journal*, Vol. II. p. 7. *Leidenfrost and Gunter*; in *J. G. Fortsmann Dissertatio de dolore faciei Fothergilli*, Duisburg, 1794, 4to. extracted in *Tode's Medical Journal*, (in German,) No. 3. Vol. I. *Richter*; in his *Surgical Library*, Vol. XI. p. 135, (in German.) *Van Wy*; in *Verhandelingen uitgegeven door het Zeeuwsch Genootschap der Wetenschappen te Vlissingen*, Dec. vii. 1782. i. e. *Transactions of the Society at Vlissingen*, Vol. VII.

Bonnard; *Journal de Medicine*, 1778, July. *Lavagan*, *ibid.* *Thouret*; *Mémoires de la Société Royale de Medicine*, à Paris, T. I. 1776. T. III. 1779. T. V. 1782 & 83. *Journal Encyclopédique*, m. April, 1777. *Gazette Salulaire*, No. 73. conf. *Richter's Chirurgical Library*, Vol. II. in German. *Andry*; *Mem. de la Soc. Roy. de Med.* T. I. 1776. T. V. 1782 & 83. *Guerin*; *Maladies des Yeux*. *Pujol*; *Treatise on that disease of the face, which is called Tic douloureux*, translated from the French into German, by *Dr. Schreger*, 1788. *Spielmann*; *Gazette Salulaire*, 1791. *Petit and Laugier*; *Journal de Medicine*, July, 1793. *Watson*; *ibid.* 1793, March, No. 1.

ERRATA.

Page 7, Note, *for* Class IV. ii. 6. *read* IV. i. ii. 6.

33, Line 7, in some copies, *for* contractability *read* contractility.

